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09/606,020	06/29/2000	Atsushi Ikeda	862.C1937	8065

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EXAMINER	
SANBET, ZEBENE T	

ART UNIT	PAPER NUMBER
2622	

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/606,020	IKEDA ET AL.	
	Examiner	Art Unit	
	Zebene T Sanbet	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-21 and 24-58* is/are rejected.

7)☒ Claim(s) *9,22 and 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2 and 3*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, 10-21, and 24-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Nobuta (5751449).

With regard with claim 1, Nobuta discloses an image forming apparatus including a printing unit capable of receiving and printing monochromatic and color images and performing printing operation by selecting one of a plurality of printing capabilities, comprising: first discrimination means for discriminating whether a received image is a color or monochromatic image (See col. 3, lines 12-14), second discrimination means for discriminating a printing capability of said printing unit (See Fig. 7), storage means for storing the received image (See Fig 1, item 1-9), and control means ,i.e., selection instruction means, for performing control, on the basis of the discrimination results obtained by said first and second discrimination means, to automatically print the received image by using said printing unit or store the received image in said storage means (See col. 5, lines 16-20).

With regard to claim 2, the apparatus according to claim 1, wherein said printing unit comprises an ink-jet printhead (See col. 5, lines 6-9).

With regard to claim 3, the apparatus according to claim 2, wherein the ink-jet printhead includes a first printhead for monochromatic printing and a second printhead for color printing (See col. 7, lines 37 and 38).

With regard to claim 4, the apparatus according to claim 3, wherein the first printhead and an ink tank containing a black ink constitute a first cartridge, the second printhead and a plurality of ink tanks respectively containing black, cyan, magenta, and yellow inks constitute a second cartridge, and the second printhead and a plurality of ink tanks respectively containing black, cyan, magenta, and yellow inks which differ in density from the inks contained in the second cartridge and are suitable for high-quality color image printing constitute a third cartridge (See col. 10, lines 31-38).

With regard to claim 5, the apparatus according to claim 4, wherein said printing unit includes: loading means into which one of the first to third cartridges is loaded (See col. 5, lines 3-5), and detection means for detecting the presence /absence of ink remaining in the cartridge loaded into the loading means (See col. 5, lines 47-55).

With regard to claim 6, the apparatus according to claim 5, wherein said second discrimination means discriminates the type of cartridge loaded into the loading means (See col. 10, lines 31-38).

With regard to claim 7, the apparatus according to claim 6, further comprising detection control means for controlling the detection means to detect the presence/absence of ink remaining in the second cartridge upon selecting ink whose presence /absence is to be detected in accordance with the first discrimination result when it is discriminated on the basis of the discrimination result obtained by said second

discrimination means that the second cartridge is loaded into the loading means (See col. 16, lines 40-52).

With regard to claim 8, the apparatus according to claim 5, wherein said control means performs control to store the received image in said storage means in accordance with the detection result obtained by said detection means (See col. 16, lines 29-39).

With regard to claim 10, the apparatus according to claim 6, wherein if said first discrimination means discriminates reception of a color image, and said second discrimination means discriminates that the first or third cartridge is loaded into the loading means, said control means performs control to store the received image in said storage means (See for example, col. 11, lines 66, 67 and col. 12, 1-3).

With regard to claim 12, the apparatus according to claim 2, wherein said ink-jet printhead comprises an electrothermal transducer for generating heat energy supplied to ink in order to discharge the ink by using the heat energy (which reads on col. 7, lines 67 and 68, and col. 8, lines 1-4).

With regard to claim 13, the apparatus according to claim 1, further comprising instruction means for instructing said printing unit to print a received image stored in said storage means (See Fig. 1).

With regard to claim 14, the apparatus according to claim 1, further comprising holding means for holding information for identifying each page of the received image as a monochromatic or color image (See col. 5, lines 17-20).

Claim 15 is rejected the same as claim 1. Thus, argument similar to that present above for claim 1 is equally applicable to claim 15. Claim 15 distinguishes from claim 1 only in that it recites a reception means for receiving the image from a communication line Nobuta (Col. 9, lines 40-42) teaches this feature.

Claims 16 is rejected the same as claim 15 except claim 16 is a method claim. Thus, argument presented above for claim 15 is not repeated herein, but is incorporated by reference.

Claim 17 is rejected the same as claim 16 Thus, argument similar to that present above for claim 16. Claim 17 distinguishes from claim 16 only in that 17 recites a computer-readable medium storing a program for executing reception/printing control on monochromatic and color images. Nobuta (See for example, Fig. 1) further teaches this feature for performing the features recited in claim 17.

With regard to claim 18, a communication apparatus including a printing unit capable of receiving and printing monochromatic and color images and performing printing operation by selecting one of a plurality of printing capabilities, comprising: reception means for receiving the image from a communication line (See col. 9, lines 40-42), discrimination means for discriminating contents of the image, i.e., a color or monochromatic image, received by said reception means (See col. 3, lines 12-14), and detection means for detecting a remaining amount of printing agent, i.e., color or black ink, in said printing unit (See col. 5, lines 47-55).

With regard to claim 19, the apparatus according to claim 18, wherein said printing unit includes a detachable printing cartridge, and said detection means further

detects a remaining amount of printing agent in accordance with the type of printing cartridge (which reads on col. 16 lines 40-52).

With regard to claim 20, the apparatus according to claim 18, further comprising storage means for storing the detection result obtained by said detection means (See col. 7, lines 14-18).

With regard to claim 21, the apparatus according to claim 19, wherein said printing cartridge includes a printing cartridge for monochromatic printing and a printing cartridge for color printing, which contains black, cyan, magenta, and yellow printing agents (See col. 10, lines 31-38).

With regard to claim 24, a printing agent detection method for a communication apparatus including a printing unit capable of receiving and printing monochromatic and color images and performing printing operation by selecting one of a plurality of printing capabilities, comprising: the reception step of receiving the image from a communication line (See col. 9, lines 40-42), the discrimination step of discriminating contents of the image received in the reception step (See col. 3, lines 12-14), and the detection step of detecting a remaining amount of printing agent in the printing unit on the basis of the discrimination result obtained in the discrimination step (See col. 5, lines 47-55).

Claims 25 substantially recite identical features as claim 17, and thus rejected the same as claim 17. Hence, argument presented above for claim 17 is not repeated herein, but is incorporated by reference.

With regard to claim 26, an image forming apparatus which can receive both a

monochromatic image and a color image and mount at least one of a plurality of types of image forming means, comprising: image memory means capable of storing a received image (See Fig. 4, item 1-9), image attribute, i.e., color or monochromatic image, discrimination means for discriminating received images as monochromatic or color images in predetermined units (See col. 3, lines 12-14), image attribute holding means for holding the discrimination result obtained by said image attribute discrimination means (See col. 3, lines 12-14), received image output determination means for determining, on the basis of a combination of information held in said image attribute holding means and the type of mounted image forming means, whether to output a received image or store the image in said image memory means without outputting the image (See Fig. 27, items s91 and s99), and control means for controlling output operation of said mounted image forming means or controlling storage of the received image in said image memory means in accordance with the determination result obtained by said received image output determination means (See col. 14, lines 56-66).

With regard to claim 27, the apparatus according to claim 26, wherein each of Said plurality of types of image forming means includes at least a printing agent of one color, and the colors of the printing agents held by said respective image forming means differ in combination (See col. 10, lines 31-38).

With regard to claim 28, the apparatus according to claim 26, wherein each of Said plurality of types of image forming means includes at least a printing agent of one color, the colors of the printing agents held by said respective image forming means

differ in combination, and at least one of said image forming means using printing agents of a plurality of colors can form an image by using only a printing agent of a specific color of the printing agents of the plurality of colors (See for example, col. 7, lines 25-33).

With regard to claim 29, the apparatus according to claim 26, wherein said plurality of types of image forming means include a plurality of types of image forming means using printing agents of a plurality of colors, and said image forming means using the printing agents of the plurality of colors differ in gray-scale expressing capability (See Fig. 10).

With regard to claim 30, the apparatus according to claim 26, wherein if the information held by said image attribute holding means indicates that the received image includes a color image, and said mounted image forming means is of a type capable of forming an image by using only a monochromatic printing agent, said received image output determination means determines to store the received image in said image memory means without outputting the image (See Fig. 27, item s99).

With regard to claim 31, the apparatus according to claim 27, wherein if the information held by said image attribute holding means indicates that the received image includes a color image, and said mounted image forming means is of a type capable of forming an image by using printing agents of a plurality of colors, said received image output determination means determines in accordance with a gray-scale expressing capability of said image forming means whether to output the received image (See Fig. 30).

With regard to claim 32, the apparatus according to claim 31, wherein if the information held by said image attribute holding means indicates that the received image includes a color image, and said mounted image forming means is of a type that is capable of forming an image by using printing agents of a plurality of colors and has a gray-scale expressing capability higher than a predetermined capability, said received image output determination means determines to store the received image in said image memory means without outputting the image (See Fig. 27, item s99).

With regard to claim 33, the apparatus according to claim 28, wherein if the information held by said image attribute holding means indicates that the received image is a monochromatic image, and said mounted image forming means is of a type that is capable of forming an image by using printing agents of a plurality of colors and also capable of forming an image by using only a printing agent of a specific color of the printing agents of the plurality of colors, said received image output determination means determines to output the received image by using the specific color (See Fig. 22).

With regard to claim 34, the apparatus according to claim 26, further comprising means for notifying and/or displaying the type of image forming means capable of outputting the received image when said received image output determination means stores the received image in said image memory means (See col. 5, lines 32-40).

Claims 35 is rejected the same as claim 26 except claim 35 is a method claim. Thus, argument presented above for claim 26 is not repeated herein, but is incorporated by reference.

With regard to claim 36, the method according to claim 35, wherein each of said plurality of types of image forming means includes at least a printing agent of one color, and the colors of the printing agents held by said respective image forming means differ in combination (See col. 16, lines 53-56).

With regard to claim 37, the method according to claim 35, wherein each of said plurality of types of image forming means includes at least a printing agent of one color, the colors of the printing agents held by said respective image forming means differ in combination, and at least one of said image forming means using printing agents of a plurality of colors can form an image by using only a printing agent of a specific color of the printing agents of the plurality of colors (See for example, col. 7, lines 25-33).

With regard to claim 38, the method according to claim 35, wherein said plurality of types of image forming means include a plurality of types of image forming means using printing agents of a plurality of colors, and said image forming means using the printing agents of the plurality of colors differ in gray-scale expressing capability.

With regard to claim 39, the method according to claim 35, wherein if the information held in the image attribute holding step indicates that the received image includes a color image, and the mounted image forming means is of a type capable of forming an image by using only a monochromatic printing agent, the received image output determination step comprises determining to store the received image (See Fig 22).

With regard to claim 40, the method apparatus according to claim 36, wherein if the information held in the image attribute holding step indicates that the received image

includes a color image, and the mounted image forming means is of a type capable of forming an image by using printing agents of a plurality of colors, the received image output determination step comprises determining in accordance with a gray-scale expressing capability of the image forming means whether to output the received image.

With regard to claim 41, the method according to claim 40, wherein if the information held in the image attribute holding step indicates that the received image includes a color image, and the mounted image forming means is of a type that is capable of forming an image by using printing agents of a plurality of colors and has a gray-scale expressing capability higher than a predetermined capability, the received image output determination step comprises determining to store the received image (See Fig. 23).

With regard to claim 42, the method according to claim 37, wherein if the information held in the image attribute holding step indicates that the received image is a monochromatic image, and the mounted image forming means is of a type that is capable of forming an image by using printing agents of a plurality of colors and also capable of forming an image by using only a printing agent of a specific color of the printing agents of the plurality of colors, the received image output determination step comprises determining to output the received image by using the specific color (See Fig. 22).

With regard to claim 43, the method according to claim 35, further comprising the notification step of notifying and/or displaying the type of image forming means capable of outputting the received image when the received image is stored in the received

image output determination step (See col. 17, lines 31-34).

Claims 44 substantially recite identical features as claim 26, and thus rejected the same as claim 26. Hence, argument presented above for claim 26 is not repeated herein, but is incorporated by reference.

Claim 45 is rejected the same as claim 26. Thus, argument similar to that present above for claim 26 is equally applicable to claim 45. Hence, argument presented above for claim 26 is not repeated herein, but is incorporated by reference

Claims 46 substantially recite identical features as claim 17, and thus rejected the same as claim 17. Hence, argument presented above for claim 17 is not repeated herein, but is incorporated by reference.

Claim 47 is rejected the same as claim 17. Thus, argument similar to that present above for claim 17 is equally applicable to claim 47. Hence, argument presented above for claim 17 is not repeated herein, but is incorporated by reference.

Claims 48 substantially recite identical features as claim 44, and thus rejected the same as claim 44. Hence, argument presented above for claim 44 is not repeated herein, but is incorporated by reference.

With regard to claim 49, the apparatus according to claim 48, wherein said control means controls image output operation on the basis of a discrimination result on a first page which is obtained by said image attribute discrimination means (See col. 15, lines 25-29).

With regard to claim 50, the apparatus according to claim 48, wherein said output means comprises a printer, and said control means performs control, on the basis of the

discrimination result obtained by said image attribute discrimination means, to perform printing operation using said printer or memory alternate reception (See col. 5, lines 46-45).

Claim 51 is rejected the same as claim 26. Thus, argument similar to that present above for claim 26 is equally applicable to claim 51. Hence, argument presented above for claim 26 is not repeated herein, but is incorporated by reference.

Claim 52 substantially recite identical features as claim 25, and thus rejected the same as claim 25. Hence, argument presented above for claim 25 is not repeated herein, but is incorporated by reference.

With regard to claim 53, an image forming apparatus comprising: read means for reading an original by using an optical mechanism (See col. 7, lines 19-24), printing means for printing the image read by said read means (See col. 5, lines 62-65), cartridge type determination means for determining a type of loaded ink cartridge (See for example, Fig.7), discrimination means for discriminating whether the ink cartridge determined by said cartridge type determination means is an ink cartridge corresponding to the image read by said read means (See col. 10, lines 3-14), and notification means for, when said discrimination means discriminates that no ink cartridge corresponding to the image read by said read means is loaded, notifying a user of corresponding information (See col. 5, lines 32-40).

With regard to claim 54, the apparatus according to claim 53, wherein said discrimination means comprises means for discriminating, on the basis of all images of a plurality of pages read by said read means, whether the loaded ink cartridge is

suitable (See col. 7, lines 52-55).

With regard to claim 55, the apparatus according to claim 54, wherein said printing means comprises means for executing no printing operation if no ink cartridge corresponding to the image read by said read means is loaded after the notification (See col. 5, lines 32-40).

Claims 56 substantially recite identical features as claim 53, and thus rejected the same as claim 53. Hence, argument presented above for claim 53 is not repeated herein, but is incorporated by reference

With regard to claim 57, the apparatus according to claim 56, wherein said discrimination means comprises means for discriminating, on the basis of all images of a plurality of pages received through said communication means, whether the loaded ink cartridge is suitable (See col. 7, lines 52-55).

With regard to claim 58, the apparatus according to claim 57, wherein said printing means comprises means for executing no printing operation if no ink cartridge corresponding to the image received by said communication means is loaded after the notification (See col. 5, lines 32-40).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nobuta (5751449) in view of kobayashi et al (6338539).

With regard to claim 11, Nobuta discuses all of the claimed subject matter as already discussed above in paragraph 2, and incorporated herein by reference. Nobuta does not explicitly call for no black ink detection. However, Kobayashi (See col.6, lines 7-15) teaches this feature.

Therefore, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching as taught by Kobayashi into the system of Nobuta, to do so would at least allow the cartridge discrimination of Nobuta to discriminate the cartridge where no black ink exists.

Allowable Subject Matter

5. Claims 9, 22, and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, US Patent Numbers: 5636032, 5896207, and 6557963.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zebene T Sanbet whose telephone number is 703-306-3430. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 703-305-4712. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Zebene T Sanbet
Examiner
Art Unit 2622

January 15, 2004

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